

REMARKS

Claims 13, 15-27, 29 and 32-46 are pending and stand rejected under 35 U.S.C. §§ 112 or 103. Claims 14, 30 and 31 have been previously cancelled.

REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 44 and 45 have been rejected under 35 U.S.C. § 112, second paragraph as being indefinite for their recitation of “the caloric content” and “the glycemic content”. These claims have been amended to recite “a caloric content” and “a glycemic content.” Accordingly, withdrawal of this rejection is respectfully requested

REJECTIONS UNDER 35 U.S.C. § 103

The pending claims have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the following reference(s):

Claim(s)	Cited Reference(s)
13, 15-27, 29, 32, 34, 35, 41 and 46	Van Geel-Schutten ¹
44 and 45	Van Geel-Schutten and Pucci ²
15, 16, 18-20, 24, 29, 32-34, 36-40, 42 and 43	Cote ³ and Ritchey ⁴

In response to these rejections, Applicants have amended the independent claims to recite “wherein the food composition has a texture that remains substantially unchanged by adding the α -glucan until the food composition enters a stomach of the person.” As discussed in greater detail below, Applicants believe that the cited references do not teach a food composition that has a texture that remains substantially unchanged by the addition of an α -glucan.

¹ Van Geel-Schutten *et al.*, APPLIED AND ENVIR. MICROBIOL., (1999) 65(7): 3008-3014 (“Van Geel-Schutten”).

² United States Patent No. 4,877,634 to Pucci *et al.* (“Pucci”).

³ United States Patent No. 5,786,196 to Cote *et al.* (“Cote”).

⁴ United States Patent No. 5,688,547 to Ritchey *et al.* (“Ritchey”).

I. REJECTION OF CLAIMS 13, 15-27, 29, 32, 34, 35, 41 AND 46

Claims 13, 15-27, 29, 32, 34, 35, 41 and 46 as being unpatentable over Van Geel-Schutten.

Van Geel-Schutten discloses that *Lactobacillus reuteri* LB 121 cells grown on sucros synthesize a glucan and a fructan with molecular masses of 3,500 and 150 kDa, respectively, and identifies the biosynthetic enzymes involved and provides a structural characterization of the glucan and fructan synthesized.⁵ High-molecular weight polysaccharides, such as cellulose, pectin and starch, are used in the food and non-food industries.⁶ These polysaccharides are used as viscosifying, stabilizing, emulsifying, gelling or water-binding agents.⁷ Van Geel-Schutten also teaches that exopolysaccharides (EPS) produced from lactic acid bacteria, which have GRAS (“generally recognized as safe”) status, can contribute to the texture of fermented milk.⁸ Specifically, Van Geel-Schutten states that “Lactic acid bacteria ... are known to produce an abundant variety of exopolysaccharides (EPS) molecules [citations omitted], which *contribute to the texture* of fermented milk.”⁹

Unlike the recited invention, Van Geel-Schutten does not teach a food composition that has a texture that remains substantially unchanged by the addition of an α -glucan, as recited in independent claims 13, 19, 27 and 29.

In order to support a rejection under Section 103, the cited reference(s) must at least teach or make obvious each and every element recited in the claims. Moreover, new uses of an old compound are patentable. In this case, Van Geel-Schutten does not teach or suggest that the food composition does not have its texture changed by the α -glucan. In fact, Van Geel-Schutten teaches away from this because it teaches that its EPS contributes to the texture of fermented milk. Thus, Van Geel-Schutten teaches that by adding the glucans and fructans

⁵ Van Geel-Schutten at page 3008.

⁶ Van Geel-Schutten at page 3008.

⁷ Van Geel-Schutten at page 3008.

⁸ Van Geel-Schutten at page 3008.

⁹ Van Geel-Schutten at page 3008 (emphasis added).

produced by the LB121 strain, the food product will have a different texture. For these reasons, Van Geel-Schutten does not teach “wherein the food composition has a texture that remains substantially unchanged by adding the α -glucan until the food composition enters a stomach of the person” as recited in amended claims 13, 19, 27 and 29.

Additionally, Van Geel-Schutten cannot be used to support a rejection under 35 U.S.C. § 103 because it is non-analogous prior art. Van Geel-Schutten is directed to modifying the texture of fermented milk with EPS, not inducing satiety and satiation. As previously argued, taste, smell or preserving food have nothing to do with inducing satiety or satiation. Thus, there is no reason for a person of ordinary skill in the art even to consider Van Geel-Schutten when working on the recited invention.

II. REJECTION OF CLAIMS 44 AND 45

Claims 44 and 45 have been rejected as being unpatentable over Van Geel-Schutten and Pucci. Claims 44 and 45, which depend from claim 13, recite that satiety and satiation are induced while lowering a caloric content and glycemic index, respectively.

Van Geel-Schutten is discussed above. Pucci is cited as teaching that polysaccharides produced by the fermentation of sucrose “*which are useful for improving the texture, stability, thickness of foods* [see abstract]” are used in milk drinks as thickeners.¹⁰ It discloses polysaccharides, namely dextrans and levans, derived from *Leuconostoc*. It teaches that spray-dried powder from a *Leuconostoc dextranicum* NRRL-B-18132 culture grown in non-fat dry milk-sucrose medium mixed in water increased the viscosity markedly.¹¹

Pucci and Van Geel-Schutten are not combinable because they are non-analogous. Pucci discuss dextrans or levans, which are different from the EPSs produced from *Lactobacillus reuteri*. There is no evidence that Pucci’s dextrans or levans have the same level of branching as disclosed in Van Geel-Schutten or recited in the claims. Thus, there is no reasonable expectation

¹⁰ Office Action at page 7 (emphasis added).

¹¹ Pucci at col. 6, lines 40-62.

that the EPS disclosed in Van Geel-Schutten would have the same properties as the EPS disclosed in Pucci.

Notwithstanding this, Pucci does not disclose that dextrans or levans do not increase the caloric content or glycemic index of a food composition. It only discloses that these polysaccharides are useful as thickeners in milk drinks or salad dressing.¹² Pucci states that “the spray dried polysaccharide powder is useful as a texture improver for frozen milk products. The recipe for this example eliminates half the whipping cream and all of the milk from the conventional ice cream recipe resulting in less calories and fat in the final product.”¹³ This statement does not support the proposition that Pucci’s dextrans and levans do not increase caloric content or glycemic index. It only states that less whipping cream needs to be used because the whipping cream is thicker as a result of the dextrans or levans. Consequently, when less food is consumed, fewer calories are ingested. Pucci does not teach that its dextrans and levans do not increase the caloric content of the whipping cream.

Pucci also does not overcome the above-discussed Van Geel-Schutten deficiencies. Pucci only teaches that its dextrans and levans are useful as thickeners. Like Van Geel-Schutten, it teaches away from the limitations recited in claim 13 – that α -glycan does not substantially change the texture of the food composition.

III. REJECTION OF CLAIM 15, 16, 18-20, 24, 29, 32-34, 36-40, 42 AND 43

Claim 15, 16, 18-20, 24, 29, 32-34, 36-40, 42 and 43 have been rejected as unpatentable over Cote in view of Ritchey.

Cote is generally directed to alternanase, an enzyme that cleaves alternan producing a low molecular weight fraction that exhibits reduced viscosity and increased solubility relative to native alternan.¹⁴ “The low viscosities of these products lend themselves to potential commercial application as substitutes for gum arabic, for use as bulking agents and

¹² Pucci at col. 6, line 40 to col. 8, line 18.

¹³ Pucci at col. 7, line 52 to col. 8, line 4.

¹⁴ Cote at abstract.

extenders in foods and cosmetics, particularly as noncaloric, carbohydrate-based soluble food additives in artificially sweetened foods.”¹⁵

The average molecular weight of these oligosaccharides is well below 10^5 Da because of the production of relatively large amounts of mono-, di- and trisaccharides as well as cyclic tetrasaccharides. Thus, Cote does not teach using a composition having an average molar weight of at least 10^5 Da as recited in independent claims 19, 23, 35, 34 and 37.

Furthermore, Cote does not teach that a food composition that contains alternan is substantially unchanged by the addition of alternan until the food composition enters a stomach of the person. Because Cote discloses substitutes for gum arabic, one would expect that its alternan would not induce satiety, in other words, would not undergo a change upon entering the stomach.

Ritchey does not overcome these deficiencies. Ritchey is directed to a nutritional meal replacement containing a natural or artificial sweetener.¹⁶ One example of an artificial sweetener is gum arabic.¹⁷ Assuming that one would replace Ritchey’s gum arabic with Cote’s alternan, one would have no reason to believe that the gum arabic would induce satiety by undergoing changes upon entering the stomach. In contrast, independent claims 19, 29, 33, 34 and 37 recited that the food composition or liquid remains substantially unchanged by the addition of the α -glycan. Therefore, the combination of Cote and Ritchey do not teach each and every element recited in the claims.

¹⁵ Cote at col. 1, lines 34-39.

¹⁶ Ritchey at abstract.

¹⁷ Ritchey at col. 5, line 26.

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CONCLUSION

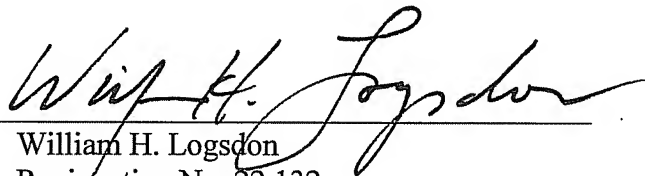
In view of the foregoing amendments and remarks, Applicants respectfully submit that pending claims 13, 15-27, 29, 32-46 in the instant application are patentable over the prior art and are in condition for allowance. Accordingly, reconsideration and withdrawal of the rejections and objections are respectfully requested.

Should the Examiner have any questions or concerns, the Examiner is invited to contact Applicants' undersigned attorney.

Respectfully submitted,

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